

## Editor-in-Chief

### M. Nivat

(Université Paris VII – Denis Diderot)  
B.P. 1  
95570 Moisselles, France

## Section Editor Mathematical Games

### A.S. Fraenkel

The Weizmann Institute of Science  
Faculty of Mathematical Science  
Dept. of Applied Mathematics and  
Computer Science  
P.O. Box 26  
Rehovot 76100, Israel  
[fraenkel@wisdom.weizmann.ac.il](mailto:fraenkel@wisdom.weizmann.ac.il)

## Honorary Board

### J. Bečvář

Mathematical Inst. Acad. of Science  
Žitná 25  
PSC 11567 Prague 1, Czech  
Republic

### C. Böhm

Via S. Crescenziano 20  
1-00199 Roma, Italy

### E. Engeler

ETH Zentrum  
Department of Mathematics  
CH-8092 Zürich, Switzerland  
[engeler@math.ethz.ch](mailto:engeler@math.ethz.ch)

### M.A. Harrison

University of California  
Computer Science Division  
775 Soda Hall  
Berkeley, CA 94720-1776, USA

### Xu Jiafu

Nanjing University  
Institute of Computer Software  
210008 Nanjing, People's Rep. of  
China

### E. Shamir

The Hebrew University  
Department of Mathematics  
Jerusalem, 91904, Israel  
[shamir@cs.huji.ac.il](mailto:shamir@cs.huji.ac.il)

### R. Siromoney

Madras Christian College  
Department of Mathematics  
Tambaram, Madras, 600 059, India

## Editorial Board Algorithms, Automata, Complexity and Games

### A. Apostolico

Purdue University  
Department of Computer Sciences  
1398 Computer Science Building  
West Lafayette, IN 47907-1398,  
USA  
[axa@cs.purdue.edu](mailto:axa@cs.purdue.edu)  
Univ. di Padova  
Dip. di Elett. e Informatica  
Via Gradenigo 6/A  
35131 Padova, Italy  
[axa@dei.unipd.it](mailto:axa@dei.unipd.it)

### G. Ausiello

Univ. di Roma "La Sapienza"  
Dip. Inform. e Sistemistica  
via Salaria 113  
00198 Roma, Italy  
[ausiello@dis.uniroma1.it](mailto:ausiello@dis.uniroma1.it)

### J. Boissonnat

INRIA, Sophia-Antipolis  
2004 Route des Lucioles  
06565 Valbonne Cedex, France  
[boissonnat@sophia.inria.fr](mailto:boissonnat@sophia.inria.fr)

### R.V. Book

Univ. of California  
Department of Mathematics and  
Computer Science  
Santa Barbara, CA 93106, USA  
[book@math.ucsb.edu](mailto:book@math.ucsb.edu)

### M. Crochemore

Université de Marne la Vallée  
Institut Gaspard Monge  
2 rue de la Butte Verte  
F-93160 Noisy-le-Grand, France  
[mac@univ-mlv.fr](mailto:mac@univ-mlv.fr)

### F. Cucker

Universitat Pompeu Fabra  
Balma 132  
08008 Barcelona, Spain  
[cucker@upf.es](mailto:cucker@upf.es)

### J. Díaz

Univ. Politech. de Barcelona  
Facultad d'Informatica  
Pau Gargallo 5  
08028 Barcelona, Spain  
[diaz@lsi.upc.es](mailto:diaz@lsi.upc.es)

### D.-Z. Du

Univ. of Minnesota  
Department of Computer Science  
Minneapolis, MN 55455, USA  
[dzd@cs.umn.edu](mailto:dzd@cs.umn.edu)

### Ph. Flajolet

INRIA  
Dom. de Voluceau-Rocquencourt  
B.P. 105  
F-78153 Le Chesnay Cedex, France

### E. Goles

Universidad de Chile  
Fac. Ciencias Físicas y Matemática  
Departamento de Ingeniería  
Matemática  
Casilla 170 correo 3  
Santiago, Chile

### O.H. Ibarra

Univ. of California at S. Barbara  
Department of Computer Science  
Santa Barbara, CA 93106, USA  
[ibarra@cs.ucsb.edu](mailto:ibarra@cs.ucsb.edu)

### M. Ito

Kyoto Sangyo University  
Faculty of Science  
Kamigamo-Motoyama  
Kita-ku  
Kyoto, 603, Japan  
[ito@ksu.vx0.kyoto-su.ac.jp](mailto:ito@ksu.vx0.kyoto-su.ac.jp)

### G. Jäger

Universität Bern  
Institut für Informatik und  
Angewandte Mathematik  
Länggassstrasse 51  
CH-3012 Bern, Switzerland  
[jaeger@iam.unibe.ch](mailto:jaeger@iam.unibe.ch)

### I. Mitrani

Univ. of Newcastle-upon-Tyne  
Department of Computer Science  
Newcastle, NE1 7RU, UK  
[isi.mitrani@newcastle.ac.uk](mailto:isi.mitrani@newcastle.ac.uk)

**S.M. Miyano**

Kyushu University 33  
Research Inst. of Fundamental  
Information Science  
Hakozaki 6-10-1  
Fukuoka 812, Japan  
miyano@rifis.kyushu-u.ac.jp

**M. Nivat (Editor-in-Chief)**

(Université Paris VII - Denis Diderot)  
B.P. 1  
95570 Moisselles, France

**V. Pan**

City University of New York  
Lehman College  
Department of Mathematics and  
Computer Science  
250 Bedford Park Boulevard West  
Bronx, NY 10468-1589, USA

**M.S. Paterson**

University of Warwick  
Department of Computer Science  
Coventry, CV4 7AL, UK  
mike.paterson@dcs.warwick.ac.uk

**D. Peleg**

The Weizmann Institute of Science  
Faculty of Mathematical Science  
Dept. Applied Math. & Comp.  
Science  
P.O. Box 26  
Rehovot 76100, Israel

**D. Perrin**

Université de Marne la Vallée  
Institut Gaspard Monge  
2 rue de la Butte Verte  
F-93160 Noisy-le-Grand, France  
perrin@univ-mlv.fr

**F.P. Preparata**

Brown University  
Department of Computer Science  
P.O. Box 1910  
Providence, RI 02912-1910, USA

**H. Proding**

Technische Universität Wien  
Institut für Algebra und Diskrete  
Mathematik  
Abteilung für Theoretische Informatik  
Wiedner Hauptstrasse 8-10  
A-1040 Vienna, Austria  
proding@rsmb.tuwien.ac.at

**A.A. Razborov**

Steklov Mathematical Institute  
Vavilova 42, GSP-1  
Moscow 117966, Russia  
razborov@class.mian.su

**G. Rozenberg**

Leiden University  
Department of Computer Science  
P.O. Box 9512  
2300 RA Leiden, Netherlands  
rozenber@wi.leidenuniv.nl

**B. Rován**

Comenius University  
Department of Computer Science  
Mlynska Dolina  
842 15 Bratislava, Slovak Rep.  
rovan@fmph.uniba.sk

**A. Salomaa**

University of Turku  
Department of Mathematics  
20500 Turku, Finland  
asalomaa@sara.cc.utu.fi

**I. Simon**

Universidade de São Paulo  
Inst. de Matem. e Estatística  
Caixa Postal 66281  
05389-970 São Paulo, SP, Brasil  
is@ime.usp.br

**P. Spirakis**

Computer Technology Inst.  
P.O. Box 1122  
26110 Patras, Greece  
spirakis@cti.gr

**S. Tripathi**

University of Maryland  
Dept. of Computer Science  
College Park, MD 20742, USA  
tripathi@cs.umd.edu

**O. Watanabe**

Tokyo Institute of Technology  
Department of Computer Science  
Meguro-ku  
Tokyo 152, Japan  
watanabe@cs.titech.ac.jp

**F. Yao**

Xerox Corporation  
Palo Alto Research Center  
Computer Science Laboratory  
Palo Alto, CA 94304, USA

## Editorial Board Logic, Semantics and Theory of Programming

**S. Abramsky**

Imperial College  
Department of Computing  
180 Queen's Gate  
London, SW7 2BZ, UK

**K.-Y. Chwa**

KAIST  
Computer Science Department  
P.O. Box 150  
130-650 Cheongryang, Seoul,  
South Korea

**P.-L. Curien**

Ecole Normale Supérieure  
LIENS  
45 Rue d'Ulm  
75230 Paris Cedex 05, France  
curien@dmi.ens.fr

**J.W. de Bakker**

C. Mathematics & Computer Sci.  
Department of Computer Science  
P.O. Box 4079  
1009 AB Amsterdam, Netherlands  
jaco@cw.nl

**P. Freyd**

University of Pennsylvania  
Department of Mathematics  
Philadelphia, PA 19104-6396 USA  
pjf@cis.upenn.edu

**P. Kanellakis**

Brown University  
Dept. of Computer Science  
P.O. Box 1910  
Providence, RI 02912, USA  
pck@cs.brown.edu

**H. Katsuno**

NTT Basic Research Laboratories  
3-1 Morinosato-Wakamiya  
Atsugi, Kanagawa, 243-01 Japan  
katsuno@theory.brl.ntt.jp

**V. Kotov**

Hewlett Packard Laboratories  
1501 Page Mill Road, Bldg 1U-14  
Palo Alto, CA 94303-1126, USA  
kotov@flute.hpl.hp.com

**A.A. Letićevsky**

Institute for Cybernetics  
pr. akad. Gluškova 40  
252207 Kiev, Ukraine  
let@d105 icyb.kiev.ua

**G. Levi**

Università di Pisa  
Dipartimento di Informatica  
Corso Italia 40  
56125 Pisa, Italy  
levi@di.unipi.it

**Z. Manna**

Stanford University  
Artificial Intelligence Lab.  
Stanford, CA 94305, USA  
manna@cs.stanford.edu

**A.R. Meyer**

Massachusetts Institute of  
Technology  
Laboratory for Computer Science  
545 Technology Square  
Cambridge, MA 02139, USA  
meyer@lcs.mit.edu

**G. Mirkowska**

ul. Kochanowskiego 28m9  
01-864 Warszawa, Poland

**M.W. Mislove**

Tulane University  
Dept. of Mathematics  
New Orleans, LA 70118, USA  
mwm@math.tulane.edu

**U. Montanari**

Università di Pisa  
Dipartimento di Informatica  
Corso Italia 40  
I-56100 Pisa, Italy  
ugo@di.unipi.it

**M. Nivat** (*Editor-in-Chief*)  
(Université Paris VII – Denis Diderot)  
B.P. 1  
95570 Moisselles, France

**G.D. Plotkin**  
University of Edinburgh  
Department of Computer Science  
The King's Buildings  
Edinburgh EH9 3JZ, UK  
gdp@lfc.ed.ac.uk

**G. Rozenberg**  
Leiden University  
Department of Computer Science  
P.O. Box 9512  
2300 RA Leiden, Netherlands  
rozenber@wi.leidenuniv.nl

**A.L. Semenov**  
Institute of New Technologies  
10 Nizhnaya Radishchevskaya Street  
109004 Moscow, Russia

**M. Sintzoff**  
Univ. Catholique de Louvain  
Unité d'Informatique  
Place Sainte-Barbe 2  
B-1348 Louvain-la-Neuve, Belgium  
ms@info.ucl.ac.be

**J. Staples**  
University of Queensland  
Software Verification Research Centre  
Dept. of Computer Science  
Brisbane, Qld 4072, Australia

**M. Takahashi**  
Tokyo Inst. of Technology  
Dept. of Mathematical and  
Computing Sciences  
Ookayama, Meguro-ku  
Tokyo, 152, Japan  
masako@is.titech.ac.jp

**P.S. Thiagarajan**  
SPIC Science Foundation  
School of Mathematics  
92 G.N. Chetty Road  
T. Nagar, Madras-600 017, India  
pst@ssf.ernet.in

**W. Thomas**  
Christian-Albrechts Univ. Kiel  
Institut für Informatik  
Olshausenstrasse 40  
24098 Kiel, Germany  
wt@informatik.uni-kiel.de

**J. Tiuryn**  
Institute of informatics  
ul. Banacha 2  
00-193 Warsaw, Poland  
tiuryn@mimuw.edu.pl

**J.D. Ullman**  
Stanford University  
Department of Computer Science  
Building 460  
Stanford, CA 94305-2140, USA  
ullman@cs.stanford.edu

**M. Wirsing**  
Ludwig-Maximilians-Universität  
Lehrstuhl für Programmierung und  
Softwaretechnik  
Leopoldstraße 11B  
D-80802 München, Germany  
wirsing@informatik.uni-muenchen.de

## Editorial Board Mathematical Games Section

**Aims and Scope.** This section is devoted to, but not restricted to, the mathematical and computational analysis of games. It covers *multi-person games*: geometrical, combinatorial, positional, probabilistic, random, recursive and Ramsey-type games, games with perfect and imperfect information, games with and without chance moves and games against Nature as well as infinite games; *one-person games*: puzzles, pebbling, tiling and others; *zero-person games*: cellular automata and others. It also covers connections or applications of games to areas such as complexity, graph and matroid theory, networks, coding theory, logic and surreal numbers.

Papers describing and analyzing algorithms or computer programs related to games are welcome. Only papers with original and nontrivial mathematical contents will be considered for publication.

**C. Berge**  
CNRS  
Equipe de Recherche 175  
Combinatoire, C.A.M.S.  
54 Boulevard Raspail  
75270 Paris Cedex 06, France

**E.R. Berlekamp**  
University of California  
Dept. of Computer Science  
Berkeley, CA 94720, USA

**H.J. Berliner**  
Carnegie-Mellon University  
School of Computer Science  
Schenley Park  
Pittsburgh, PA 15213-3890, USA

**J.H. Conway**  
Princeton University  
Mathematics Department  
Fine Hall  
Washington Road  
Princeton, NJ 08520, USA

**A.S. Fraenkel** (*Section Editor*)  
The Weizmann Institute of Science  
Faculty of Mathematical Science  
Dept. of Applied Mathematics and  
Computer Science  
P.O. Box 26  
Rehovot 76100, Israel  
fraenkel@wisdom.weizmann.ac.il

**Y. Gurevich**  
University of Michigan  
EECS Department  
Ann Arbor, MI 48109-2122, USA

**R.K. Guy**  
University of Calgary  
Dept. of Math. & Statistics  
2500 University Drive N.W.  
Calgary, Alb., T2N 1N4, Canada

**J.H. van Lint**  
T.U. Eindhoven  
Afdeling Wiskunde  
Postbus 513  
5600 MB Eindhoven, Netherlands

## Editorial Board Surveys and Tutorial Section

**Aims and Scope.** This section contains expository papers (surveys or tutorials) dealing with important topics, areas or developments in any part of theoretical computer science. Papers should give a comprehensive and original treatment of the ideas, results and key proofs in the area they cover, and should also contain an extensive bibliography. Each paper in the section (survey or tutorial) should provide an expert introduction to a modern research area in theoretical computer science for which no prior treatments of similar extent have been given.

**J. Gallier**  
University of Pennsylvania  
Moore School of Electrical  
Engineering  
Dept. of Computer and Information  
Science  
200 South 33rd Street  
Philadelphia, PA 19104-6389, USA  
jean@saul.cis.upenn.edu

**M. Nivat** (*Editor-in-Chief*)  
(Université Paris VII – Denis Diderot)  
B.P. 1  
95570 Moisselles, France